

Appl. No. 09/581,345  
Amdt. dated May 28, 2004  
Amendment under 37 CFR 1.116 Expedited Procedure  
Examining Group

PATENT

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1-112. Canceled.

1 1/3. (Previously presented) An isolated anti-mesothelin antibody comprising a variable heavy ("V<sub>H</sub>") chain and a variable light ("V<sub>L</sub>") chain, which V<sub>H</sub> and V<sub>L</sub> chains have complementarity-determining regions ("CDRs") as set forth in Figure 1 (SEQ ID NO:5).

2 1/4. (Previously presented) An antibody of claim 1/3, wherein said V<sub>H</sub> and V<sub>L</sub> chains comprise framework regions ("FRs") as set forth in Figure 1 (SEQ ID NO:5).

3 1/5. (Previously presented) An antibody of claim 1/3, wherein said antibody is a single chain Fv ("scFv").

4 1/6. (Previously presented) An antibody of claim 1/5, wherein said scFv has V<sub>H</sub> and V<sub>L</sub> chains joined by a peptide linker.

5 1/7. (Previously presented) An antibody of claim 1/6, wherein said peptide linker has the sequence of SEQ ID NO:6.

6 1/8. (Previously presented) An scFv of claim 1/5, wherein said scFv has the sequence shown in Figure 1 (SEQ ID NO:5).

7 1/9. (Previously presented) An antibody of claim 1/3, which is a disulfide stabilized Fv ("dsFv").

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8 120. (Currently amended) A dsFv of claim 1/9, having a  $V_L$  chain containing a cysteine at position 42, 43, 44, 45, 46, 98, 99, 100, or 101, such positions being determined in accordance with the numbering scheme published by Kabat and Wu, and a  $V_H$  chain containing a cysteine at position 43, 44, 45, 46, 47, 103, 104, 105 or 106, comprising a  $V_L$  chain paired with a  $V_H$  chain, said chains being connected through a disulfide bond between a pair of cysteines, said pair of cysteines being positioned in the respective chains at positions selected from the group consisting of:  $V_H$ 44- $V_L$ 100;  $V_H$ 105- $V_L$ 43;  $V_H$ 105- $V_L$ 42;  $V_H$ 44- $V_L$ 101;  $V_H$ 106- $V_L$ 43;  $V_H$ 104- $V_L$ 43;  $V_H$ 44- $V_L$ 99;  $V_H$ 45- $V_L$ 98;  $V_H$ 46- $V_L$ 98;  $V_H$ 103- $V_L$ 43;  $V_H$ 103- $V_L$ 44, such positions being determined in accordance with the numbering scheme of Kabat and Wu.

9 121. (Previously presented) An antibody of claim 1/3, wherin said  $V_H$  and  $V_L$  chains are encoded by SEQ ID NO:1.

122. Canceled.

10 123. (Previously presented) An antibody of claim 1/3, further wherein said antibody is labeled with a detectable label.

11 124. (Previously presented) An scFv of claim 1/5, further wherein said scFv is labeled with a detectable label.

12 125. (Previously presented) A dsFv of claim 1/9, which dsFv is labeled with a detectable label.

13 126. (Previously presented) An antibody of claim 1/3, further wherein said antibody is attached or fused to a therapeutic agent.

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14 127. (Previously presented) An scFv of claim 15, further wherein said scFv is attached or fused to a therapeutic agent.

15 128. (Previously presented) A dsFv of claim 14, further wherein said dsFv is attached or fused to a therapeutic agent.

16 129. (Previously presented) An antibody of claim 126, wherein said therapeutic agent is a toxin.

17 130. (Previously presented) An scFv of claim 127, wherein said therapeutic agent is a toxin.

18 131. (Previously presented) A dsFv of claim 128, further wherein said therapeutic agent is a toxin.

19 132. (Previously presented) An antibody of claim 129, wherein said toxin is a *Pseudomonas* exotoxin or cytotoxic fragment or mutant thereof.

20 133. (Previously presented) An scFv of claim 130, wherein said toxin is a *Pseudomonas* exotoxin or cytotoxic fragment or mutant thereof.

21 134. (Previously presented) A dsFv of claim 131, wherein said toxin is a *Pseudomonas* exotoxin or cytotoxic fragment or mutant thereof.

22 135. (Previously presented) An isolated anti-mesothelin antibody comprising a variable heavy ("V<sub>H</sub>") chain which V<sub>H</sub> chain has complementarity-determining regions as set forth in Figure 1 (SEQ ID NO:5).

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23 136. (Previously presented) An antibody of claim 135, wherein said VH chain  
has the sequence set forth in Figure 1 (SEQ ID NO:5).

24 137. (Previously presented) An antibody of claim 135, wherein said antibody  
is attached or fused to a therapeutic agent or detectable label.

25 138. (Previously presented) An antibody of claim 135, wherein said  
therapeutic agent is a toxin.

26 139. (Previously presented) An antibody of claim 138, wherein said toxin is a  
*Pseudomonas* exotoxin or cytotoxic fragment or mutant thereof.

27 140. (Previously presented) An isolated anti-mesothelin antibody comprising a  
variable light ("VL") chain which VL chain has complementarity-determining regions as set  
forth in Figure 1 (SEQ ID NO:5).

28 141. (Previously presented) An antibody of claim 140, wherein said VL chain  
has the sequence set forth in Figure 1 (SEQ ID NO:5).

29 142. (Previously presented) An antibody of claim 140, wherein said antibody  
is attached or fused to a therapeutic agent or detectable label.

30 143. (Previously presented) An antibody of claim 142, wherein said  
therapeutic agent is a toxin.

31 144. (Previously presented) An antibody of claim 143, wherein said toxin is a  
*Pseudomonas* exotoxin or cytotoxic fragment or mutant thereof.

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32 145. (Previously presented) A composition comprising a pharmaceutically acceptable carrier and an immunoconjugate which comprises a therapeutic agent or a detectable label attached or fused to an anti-mesothelin antibody comprising a variable heavy ("V<sub>H</sub>") chain and a variable light ("V<sub>L</sub>") chain, which V<sub>H</sub> and V<sub>L</sub> chains have complementarity-determining regions ("CDRs") as set forth in Figure 1 (SEQ ID NO:5).

33 146. (Previously presented) A composition of claim 145, wherein said V<sub>H</sub> and V<sub>L</sub> chains comprise framework regions ("FRs") as shown in Figure 1 (SEQ ID NO:5).

34 147. (Previously presented) A composition of claim 145, wherein said antibody is a single chain Fv ("scFv").

35 148. (Previously presented) A composition of claim 147, wherein said scFv has V<sub>H</sub> and V<sub>L</sub> chains joined by a peptide linker.

36 149. (Previously presented) A composition of claim 145, wherein said peptide linker has the sequence of SEQ ID NO:6.

37 150. (Previously presented) A composition of claim 147, wherein said scFv has the sequence shown in Figure 1 (SEQ ID NO:5).

38 151. (Previously presented) A composition of claim 145, wherein said antibody is a disulfide stabilized Fv ("dsFv").

39 152. (Previously presented) A composition of claim 145, wherein said therapeutic agent is a toxin.

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40 153. (Previously presented) A composition of claim 152, wherein said toxin is  
a modified *Pseudomonas* exotoxin or a cytotoxic fragment or mutant thereof.

41 154. (Previously presented) A composition comprising a pharmaceutically  
acceptable carrier and an immunoconjugate which comprises a therapeutic agent or a detectable  
label attached or fused to an anti-mesothelin antibody comprising a variable heavy ("V<sub>H</sub>") chain  
having complementarity-determining regions ("CDRs") as set forth in Figure 1 (SEQ ID NO:5).

42 155. (Previously presented) A composition of claim 154, wherein said V<sub>H</sub>  
chain comprises framework regions ("FRs") as set forth in Figure 1 (SEQ ID NO:5).

43 156. (Previously presented) A composition of claim 154, wherein said  
therapeutic agent is a toxin.

44 157. (Previously presented) A composition of claim 154, wherein said toxin is  
a modified *Pseudomonas* exotoxin or a cytotoxic fragment or mutant thereof.

45 158. (Previously presented) A composition comprising a pharmaceutically  
acceptable carrier and an immunoconjugate which comprises a therapeutic agent or a detectable  
label attached or fused to an anti-mesothelin antibody comprising a variable light ("V<sub>L</sub>") chain  
having complementarity-determining regions ("CDRs") as set forth in Figure 1 (SEQ ID NO:5).

46 159. (Previously presented) A composition of claim 158, wherein said V<sub>L</sub>  
chain comprises framework regions ("FRs") as set forth in Figure 1 (SEQ ID NO:5).

47 160. (Previously presented) A composition of claim 158, wherein said  
therapeutic agent is a toxin.

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48 161. (Previously presented) A composition of claim 158, wherein said toxin is a modified *Pseudomonas* exotoxin or a cytotoxic fragment or mutant thereof.

49 162. (Previously presented) A kit for detecting mesothelin on the surface of cells, said kit comprising:

- (i) anti-mesothelin antibody comprising a variable heavy ( $V_H$ ) chain and a variable light (" $V_L$ ") chain, which  $V_H$  and  $V_L$  chains have complementarity-determining regions ("CDRs") as set forth in Figure 1 (SEQ ID NO:5); and,
- (ii) instructions printed on a tangible medium, said instructions describing methods of using and said antibody for detecting mesothelin on the surface of cells.

50 163. (Previously presented) A kit of claim 162, wherein said  $V_H$  and  $V_L$  chains of said antibody have the sequence set forth in Figure 1 (SEQ ID NO:5).

51 164. (Previously presented) A kit of claim 162, wherein said antibody is a scFv.

52 165. (Previously presented) A kit of claim 164, wherein said scFv has the sequence set forth in SEQ ID NO:5.